

Dissertation or Conclusion
An Essay
on the
Inhalation of Medicinal
agents & the
Respiratory System
Respectfully Submitted
to the
almost
Homoeopathic Medical College
of Pennsylvania
in the thirtyith day of January
one thousand eight hundred & fifty
for the
degree of
Doctorate in Medicine
the student and by the name of
P. W. H. Atwood M.D.
of the
State of
Wisconsin

The Inhalation of Medicines

all remedial agents are taken up by
the ~~inhalation~~ ^{by} of medicaments
agent has for centuries furnished the
medical world a theme, for much and
animated controversy. Two general and
almost exclusive theories, each having
their equally exclusive partisans, have
in the main been adopted - known as
as the sympathetic and the absorptive.

The adherents of the former maintain,
that other medicines, when brought into
contiguity with the peripheral nerves
distributed upon the membranes lining
the stomach and other viscera, produce
permeability over all, even the most remote
parts of the organism, through the medium
of nervous sympathy.

The advocates of the latter, hold that all medicinal agents are taken up by the capillary vessels and lacteal, and conveyed through the circulation to all parts of the body, producing their various phenomena by actual contact with the different tissues.

The strongest example of a purely sympathetic agency, are found in the action of Nitric and Hydrocyanic acid. Those who have taken the former even in a remarkably minute quantity, have observed marked effect of it in a few seconds, though a particle of it had not been swallowed.

The latter has been known to produce symptoms on the human subject in fifteen seconds, and to prove fatal

to young cats in from five to ten seconds,
a time considered too brief for it to become
absorbed into the circulation.

The absorption doctrine refers upon
the general fact, that mind and
saline medicaments, and such other
agents as are detectable by clinical
test, and also those which possess
obvious properties, are generally capable
of being detected in the blood, and
often also in the exhalation from the lungs.

It affects not essentially our
inquiry which theory we may adopt
to explain the mode by which the
pathogenic effects of medicinal agents
are produced. It is highly problem-
atical that the infinitesimal atom
acts upon the same organs and

systems, and through the same medium
as the grosser materials. ~~through~~
~~The~~ ^{the} intimate connection which the
anatomical and physiological relation
of the stomach and lungs with their
passages, ~~renders~~ ^{renders} open the subject.
renders a general notice of them
necessary ^{before} entering into the

This begins on each side with
a ~~mass~~ ^{mass} of membrane, that which
supplies the stomach is about a line
in thickness, and when undistended is
arranged in numerous rugae or folds,
and is continuous with the oesophagus
and the duodenum below. It is soft,
villous, and of a light pink color.
The living membrane of the air
passages and lungs, is of an exceedingly

delicate structure, smooth and almost transparent. It extends through the minutest radicles of the bronchia, and expands with the formation of air-cells. The capacity of this organ for air is variously estimated. The maximum amount taken in at each inspiration is about thirty cubic inches.

Both these membranes are largely supplied with capillaries, the latter however more minutely than the former, for the purpose of exposing a vast amount of blood for oxygenation during the process of respiration. Some idea may be conceived of the great extent of the mucous surface of the lung, and of the infinite number of capillary vessels distributed upon

it, while we bear in mind that a middle sized man has about twenty-eight pounds of blood, and that all this is exposed upon the surface for evaporation every hour, and even three minutes.

Both viscera derive principally their nervous agency from the same source - the Pneumogastric nerve. The function of one is the digestion of aliment conveyed into it, and by its lacteals the absorption of its nutritient proportion for the maintenance of the body. It also through the arterial and venous capillaries, appropriates all fluids by the process of endosmosis. The other performs the important function of arterializing the blood

and separating from it, the carbon
with which it is charged, and ~~and~~ and ~~and~~

In neither do we find any special
provision for the digestion or appropriation
of medicinal agents, and hence has
arisen the declaration that the human
Stomach was never intended as a
Receptacle for medicine, and ~~and~~

Having briefly passed in review, those
anatomical and physiological characteris-
tics of the Stomach and Liver, which
are particularly concerned in this in-
quiry, the most casual observer will
not fail to notice the analogy
in the structure of their mucous membranes.

That the capillary vessels are
principally concerned in the appropria-
tion of medicinal agents, is pretty

clearly established by the carefully conducted experiments of Tiedemann and Gmelin. By incorporating in the food various substances possessing color, odor or chemical properties, by which they might be detected in the fluids - as Quinckes Madder and Rhubarb, Musk, Camphor and Asafoetida, and saline substances as of Lead, Baryta and Mercury - and allowing a sufficient time for them to be taken up. Traces of them were generally found in the venous blood and urine, whilst they were rarely detectable in the chyle.

That the capillaries which supply in still greater profusion the mucous membrane of the lungs, deriving their nervous agency from

the same source, and presenting a vastly greater extent of surface, would also be more competent to perform the same function. Could agents be brought in contact with this surface without disturbing their natural functions, appears to be a very legitimate analogical induction.

It has been proved that water injected into the air passages, enters the pulmonary veins directly, or indirectly by the lymphatics—probably the former. Examples are not wanting of morbid phenomena, and even fatal consequences, from the injection and inhalation of medicinal and noxious agents. The color of perspiration in the blood and urine after inhaling it fumes—Sodium, Mercury, Tobacco, &c.

Ammonium and other remedies produce their specific effect both speedily and powerfully when inspired.

Sulphuric Hydrogen, Carbureted Hydrogen, Nitrogen, and Carbonic Acid cause most imminent death by asphyxia. The last has frequently produced fatal results without simple asphyxia, in sleeping rooms where charcoal was burning. Sabadilla is mentioned by Prof. C. B. Matthews, as producing violent headache when carried in the hat upon the head. *Rhus vernix* causes very severe Erysipelas by approaching in the vicinity of it, closely with the capillaries causing the Epidemic and Contagious diseases, as Small pox, Scarletina, & measles.

and Typhoid Fevers, are supposed to be generated by inhaling their noxious effluvia. Intermittent and Remittent Fevers, also arise from mismanagement.

As regards the agents before mentioned, Glutinous and Hydrocyanic Acid, it appears to me that their modus operandi is very clear. They are highly volatile even in cool air, and far more so when introduced to an elevated temperature in the cavity of the mouth. Their minute particles are conveyed by the first inspiration to every part of the vastly extended surface of mucous membrane in the lungs, they pass immediately into the capillaries, and carry directly to the left auricle and ventricle, and from thence to

the most remote and minute fibers
of the body. All this may take place
in the adult probably within ten
seconds, and in the infant in less
than half that time.

Hahnemann says "the remedy
acts first as powerfully by communicating
its medicinal influence to the system
through the nasal fossa and the lung,
as if a dose of the remedy had been
swallowed" and also, "by increasing
the number of respiration, the power
of the remedy may be increased a
hundred fold."

desire action. Curiously to the views
of many of the most distinguished
and experienced homœopathists of
the present day, it is of very little

consequence what potency what potency
is administered provides it be the proper
homoeopathic specific. Regarding their
observation as correct, and considering
it fully established that our medicines
can be introduced into the lungs in a
sufficient quantity to impinge the
morbid system, without in any manner
disarranging the harmony of their function,
the conclusion is legitimate, that the
full specific effect of remedies would
follow their administration by
inhalation. And certainly if the
high potencies are capable of modifying
diseases action, the dose of the thirtyeth
attenuation or lower could hardly
fail to act.

But we are not compelled

to rely upon reasoning to support our position. We have the testimony of one of the most correct medical observers of his age - the great founder of our system who seemed to possess nearly the same confidence in medicine.

inhaler, as in its evolution of the stomach.

Many examples of a most striking character of cures by inhalation of the high potencies are given by Dr. Gross. And published in the first volume of the Homoeopathic

Examiner. I arrived in about a year from my own brief practice, several cases have fallen under my observation, exhibiting the most brilliant results from this mode of administration. The following case

of Grammatical Errors, from the rarity
of its occurrence, and from its extreme
obstinate & the allopathic practice, is
worthy of notice. In the Spring of
1849, about three months after
commencing the homoeopathic practice,
I was called to Mrs. S. aged about 30
years, who was bitten in the hand the
day previous by a cat. She had felt
no want of symptoms until this
morning when she became very stupid
and unconscious, and the jaws
firmly locked. I arrived in about one
hour after the symptoms had
set in. Her friends of course had not
failed to mix her well with Spirit of
Camphor and Stiff Cassafectum
into the mouth but all availed nothing.

All efforts had been made to arouse
him by shaking and pinching, without
making any impression. I immediately
took from my pocket a vial containing
the 13th potency of Mus Tomca, and
placing it to his nostril, permitted
him to inhale twice. In about thirty
seconds a spasmodic action commenced
in the lower eyelid - this continued to
revert and in three minutes the facial
muscle were involved, and in another
minute he opened his eyes, which
were fixed, for the first time in four
hours. His dose continued to exert
its influence, and in twenty minutes
all the muscles relaxed, and he was
able to converse. There was a strong
tendency for some day after to a

return of the condition, which was
readily removed by a repetition of
the remedy.

I am disposed to think
that the elective value of this mode
of administering medicine has been
for too little regarded by the profession.
There are numerous cases in which
there exists an urgent necessity of
resorting to this mode - the patient
not being able to swallow. Such
are apoplexy, epilepsy, mania and
paralysis of the muscles of deglutition,
tetanus, hysteria, convulsion, and
those diseases in which dysphagia
exists. In the diseases of children
it is of great advantage when we
do not wish to disturb their quietude.

Another advantage which this method
possesses over that by the stomach,
arises out of the fact that this organ
is made the receptacle of food and
drinks of various and heterogeneous
qualities, liable at all times to distract
the legitimate action of the medicine.
The minute quantity has to undergo
an intermission with its contents,
rendering the time comparatively long
before any considerable proportion of it
can pass into the circulation. To
produce a salutary reaction of the
vital power against the disease, it
would seem that the impression or
stimulus of the dynamized agent
should be but momentary, so that
the reactive force might meet it

full influences when taken into the stomach, it requires from one to three hours for all its particles to enter the circulation, so that the last taken up might act prejudicial to the ~~rapid~~ reaction of the first ~~action~~ ~~analog~~.

This objection does not exist to inhal'd medicine. It enters immediately the circulation, produces its impression in a few minutes, and leaves the vital organism full and uninterrupted time for reaction.

It may be objected - and with an apparent reason - that when medicine is exhibited by the lungs, it is introduced into a medium of carbonic acid, which might in some degree modify its properties.

This objection however seems to exist in full force when taken by the mouth. The respiratory process is carried on through the medium of the mouth and nostrils - and under the most cautious management, a certain amount of expiratory air enters the cavity of the mouth at every respiration. If it possessed irritant properties, this would be sufficient to destroy the few effects of most medicines given.

As medicines however are freed with their counteracting influence, we do not consider it as exerting a modifying influence on the agent dynamically administered.

The writer would suggest

that all agents sufficiently volatile
to be taken into the lungs in a
quantity capable of producing
pathognomonic symptoms, should
be so proved in addition to
proving them by the stomach.

We are aware that many
high authorities regard the nerves of
the stomach as the medium through
which medicinal agents act upon
the organism. Even this true it would
not affect materially our general
position, as we have the same
nervous agency in the lungs,
which supplies the stomach, and
the objection urged against the
one would maintain near the
same relation to the other.

Should the Essay have the
desired effect, to call the
attention of the profession more
directly to this branch of inquiry,
the writer will feel amply
rewarded.

G. W. Chittenden M.D.